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ABSTRACT

This paper provides an overview of the issues and challenges facing postsecondary education in workforce development in the states. Key questions of employer, learner, and government and public expectations are listed as a suggested starting point for discussions between state, education, and business leaders about strategies for addressing these challenges. Employers, learners, and the public are seen as placing increasing demands and expectations on colleges and universities to do a better job preparing the workforce. The role of higher education in workforce development is examined, using employer, learner, and public expectations as a basis; the kinds of responses that colleges and universities must offer in return are addressed. Employers are placing increasing demand for basic education skills, such as in mathematics and communication, and basic workplace skills, such as teamworking, interpersonal relations, and leadership. Expectations of learners are aligning themselves with the employer needs, especially among older, non-traditional students. As learners and employers seek more flexibility and access to education and training, institutions must respond with new instructional delivery systems, including teacher preparation and professional development, based on public need and demand. Coordination across federal, state, and public needs is the key to an effective workforce development system and the changes that this will bring to the current educational systems. (Contains 17 reference notes.) (NAV)

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The Roles of Postsecondary Education in Workforce Development

Challenges for State Policy

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The Roles Of Postsecondary Education In Workforce Development: Challenges for State Policy

Robert A. Wallhaus

Prepared for the Wingspread Symposium

Toward More Effective Learning Environments:
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March 1996

SHEEO State Higher Education Executive Officers

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The State Higher Education Executive Officers is a nonprofit, nationwide association of the chief executive officers serving statewide coordinating boards and governing boards of postsecondary education. Its objectives include developing the interest of the states in supporting quality higher education; promoting the importance of state planning and coordination as the most effective means of gaining public confidence in higher education; and encouraging cooperative relationships with the federal government, colleges and universities and other institutional state-based association. Fifty states, the District of Columbia and Puerto Rico are members.

Copies of this paper are available from the SHEEO Office for $8.00 prepaid. Send request to State Higher Education Executive Officers, 707 Seventeenth Street, Suite 2700, Denver, Colorado 80202-3427; fax 303-296-8332.

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EXECUTIVE SUMMARY

Employers, learners and the public are placing increasing demands and expectations on colleges and universities to do a better job in helping to prepare the workforce. Employers are viewing colleges and universities as they do other important suppliers. They want a product which is delivered in a timely fashion and meets demanding quality standards. Learners, both adults and recent high school graduates, are also looking for the skills which will allow them to compete successfully in a rapidly changing, and increasingly global, marketplace. If colleges and universities are not able to respond to these needs other suppliers will be found or decisions will be made by corporations to "make rather than buy" what is needed. Similarly, the public has historically held high expectations for the contributions that colleges and universities make to society and the economy; and if anything is now raising its expectations at the same time that the costs of college attendance continue to rise.

This paper provides an overview of some of the issues and challenges facing postsecondary education in workforce development in the states. The following key questions offer a starting point for discussions between state, education and business leaders about strategies for addressing these challenges.

Expectations of Employers

1. What strategies should colleges and universities use to help students develop "workplace skills?"

2. Should generic work-based experiences be used to develop these skills as part of all curricula?

3. What steps should State Higher Education Executive Officers and other state leaders take to build relationships with businesses and unions?

4. What's "in it" for employers to work collaboratively with colleges and universities?

5. What are the primary barriers that employers face in directly supporting work-based learning?

6. Are current outcomes assessment efforts in higher education an effective response to the interests of employers in certification and standards?

7. How can states work together to develop a "common language" with regard to standards and ensure their "portability?"

Learner Expectations

8. What can SHEEOs and college and university leadership do to encourage and support actions on the part of students and faculty that improve learning productivity?

9. What should colleges and universities do in cooperation with elementary and secondary education to ensure that efforts to "prepare students for work" are compatible with efforts to "prepare students for college?"

10. What changes are needed in teacher preparation curricula and in teacher professional development programs in this regard?

11. What can be done to ensure that measures and standards related to "preparation for work" (e.g., certificates of initial mastery) are compatible with college and university admission and placement processes?

12. What can postsecondary education do to better articulate with job-based learning?

13. Are tech-prep program designs facilitating or foreclosing eventual baccalaureate completion opportunities?

14. What steps could be taken to deliver training at work sites in a cost-effective manner?

Expectations of Government and the Public

15. What strategies can SHEEOs pursue to establish broader and more effective linkages with other state agencies contributing to the state's workforce development system?

16. What is higher education's role in relation to state Human Resource Development Councils (HRDCs)?

17. How do states support well coordinated directions at the state level and simultaneously provide flexibility and encourage local communities to embark upon different courses that are best suited to their distinctive needs?

18. What criteria should be used in establishing one-stop career centers and determining how they would be administered at the state and local levels?

19. How can state higher education assessment procedures be used to respond to employers interests in performance?

20. How can SHEEOs and colleges and universities work with schools and businesses to develop "feedback systems" at points of transition, such as "employer feedback systems" which provide information about the performance of college graduates?

FOREWORD

Over the past several years the State Higher Education Executive Officers (SHEEO) has committed a significant portion of its agenda to encouraging states to develop policies that support successful student transitions from K-12 to postsecondary education and from education and training programs to the workplace. Our work this year focuses on building an action agenda to define and reach consensus on the role of postsecondary education in preparing the workforce. The strategy is aimed at bringing together education leaders from state nigher education coordinating and governing boards, departments of education, governor's offices, legislatures, economic development and workforce development agencies, colleges, universities and high schools to discuss and debate the appropriate roles for colleges and universities in statewide workforce preparation systems. Additionally, we have challenged these state and institutional leaders to build collaborative alliances across agencies and education sectors so that workforce education and training resources and opportunities are well coordinated.

In preparation for these national and regional forums, and to provide participants background and understanding to the issues and challenges, SHEEO is developing a number of publications. This report, *The Role of Postsecondary Education in Workforce Development: Challenges for State Policy* by Robert A. Wallhaus, is the first of these efforts. The report highlights the key challenges facing states in their development of statewide workforce preparation systems. In particular, it underscores some of the changes that colleges and universities will need to make to be effective partners in such systems. Other forthcoming publications on this topic will include a report of the Wingspread Symposium *Toward More Effective Learning Environments: The Role of Postsecondary Education in Workforce Preparation*, a report of the Western Regional Conference on the Role of Postsecondary Education in Workforce Preparation, and a series of policy briefs.

The development of this agenda has been a collaborative effort involving the commitment and support of many organizations and individuals. We would especially like to thank Charles Lenth at the Education Commission of the States, Richard Jonsen, Dewayne Matthews, Jere Mock and Cheryl Blanco at the Western Interstate Commission for Higher Education, Donald Carstensen and Thomas Saterfiel at American College Testing, Herbert Flamer at Educational Testing Service, Irene Spero at The College Board, and Barbara Lieb at the National Institute for Postsecondary Education, Libraries and Lifelong Learning, U.S. Department of Education, for their co-sponsorship of the national and regional meetings. In addition to the individuals listed above, we appreciate the assistance of Carl Van Horn, Hank Spille, Dan Hull and Peter Ewell. All provided guidance and valuable feedback to the meeting agendas and publication development on this critical issue.

At SHEEO, we particularly appreciate the support of the state higher education leaders. The Committee on Workforce Education and Training and its chair, Jeffrey Baker, Commissioner on Higher Education for Montana, provided helpful direction to the agenda and a pledge to move it forward within their states.

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The Social, Political and Economic Forces Shaping Workforce Development Priorities

At a news conference announcing the joint venture of Microsoft and NBC to establish the MSNBC network, which will allow users to get customized news on demand, Jack Welch, CEO of General Electric (NBC's parent company) declared, "Commerce will change more in the next decade than it has in the last 100 years."[1]

At this same news conference Microsoft's Bill Gates called the joint venture "the beginning of the interactive world." However, Microsoft and NBC are not alone in positioning themselves to compete in this interactive world of tailored news and information exchange; others include: ABC and Disney (once Disney's $19 billion deal to buy Capital Cities-ABC is completed), and Time-Warner who offered $7.5 billion to buy Turner Broadcasting Systems. All of these developments occurred in the last year. They reflect the new forces shaping commerce that are characterized by mergers of corporations and technologies that seemingly were unrelated just a few years ago; by decisions involving huge amounts of money that must be made with lightening speed; and by high risks in the face of competitive forces that literally change over night.

Even ten years ago business communications were conducted almost solely via telegraph and the postal service. Today business is carried out using a variety of technologies including teleconference, fax, e-mail and the Internet. The way people work is constantly changing. Now virtually all businesses use the microcomputer to conduct the full scope of commercial functions. Banks of telephone operators have been replaced with digital switches and voice recognition systems. Coca Cola now sells more of its product internationally than domestically.

An almost endless list of examples of how commerce is changing could be constructed, but the inescapable fact is the world of businesses and corporations is changing, rapidly. And, not surprisingly, their workforce needs are not only also changing rapidly but at the same time becoming more crucial to their success. As one corporation CEO put it, "How do you distinguish yourself in this market? The product is the same. Price? The same. Quality? The same. Service? The same. The only way to get an advantage is through the quality of your people."[2]

However, even as businesses place more emphasis on the capabilities of their employees, the challenges of acquiring and maintaining a well prepared workforce are mounting. To a large extent these challenges are a result of the economic and social milieu in which business is conducted.

Businesses are placing increased emphasis on "basic skills" in mathematics and communication and "workplace skills" such as leadership, interpersonal relations, the ability to work in teams, and the capacity to adapt to rapid change. Many of these skills are acquired initially at an early age and some are learned largely in the home. However, at the same time, an increasing number of pre-school children, currently around 40 percent, are being raised in one-parent families or in households where neither parent is present. Many such households exist below the poverty level. Minority populations are growing and, in some states, will become the majority of citizens. National census data indicate that too many of these citizens are poor and have low educational achievement levels.

Policymakers want to move individuals off welfare rolls to gainful employment. But, national and state statistics show a growing mismatch between the labor pool and labor demand. For example, in Illinois most of the 260,000 people now unemployed or on welfare are at best qualified for only entry-level jobs, but the state's employers are expected to generate only 69,000 entry-level jobs in the next year.[3]

These social, demographic and economic trends are resulting in job market conditions that adversely affect the ability of employers to acquire and sustain the kind of workforce they need to maintain a competitive edge. They underlie many of the "new dynamics" of the world of work. A complete discussion of these changing workplace dynamics can be found in a forthcoming paper by Carl Van Horn entitled "Economic Change and the American Worker," prepared for The Twentieth Century Fund. A number of the following examples have been drawn from that paper:

- On January 2, 1996 AT&T announced that it will eliminate 40,000 jobs, of which 24,000 will target people in management positions.[4] This happens after a year in which the stock market hit record highs, inflation and the unemployment rate are low, the economy is growing at 2 to 3 percent per year, and the nation's productivity is up by 4.8 percent, the highest rate in the industrialized world. AT&T's reasons for these layoffs? Not that business is bad, but rather, "our industry is changing at lightening speed. What was acceptable last year is not acceptable this year. We've radically changed the focus and cost structure of the new AT&T....to defend our markets and attack others."

- In 1993 large corporations cut over 600,000 positions.[5] Unfortunately, the new workers that are needed by these same corporations require different skills, and those who are laid off will need to retool for the new demands of technology and the workplace.

- In 1970 manufacturing comprised over 27 percent of the economy while services comprised 49 percent. By 1992, the manufacturing sector had shrunk to 16.6 percent; services had grown to 61.4 percent.[6] Again, different kinds of training and skills are required as these shifts occur.

- The emerging job market is dividing into two distinct components: one with well-paid, technical and administrative positions requiring high skills and college degrees; the other with minimum-wage occupations that could be performed by virtually anyone with reasonably good "basic skills" and "workplace skills." There will be more of the latter kinds of jobs than the former, which is accounting for the increasing disparity between income levels.

- Twice as many blue collar workers as white collar workers were displaced in the 1981-82 recession. In the late 1980s, there was no difference in the number of displaced blue and white collar workers.[7] The American Management Association's 8th annual survey of 713 companies that engaged in "downsizing" reported that 62 percent of jobs eliminated by firms between June 1993 and July 1994 were supervisory, management, professional and technical.[8] Retraining needs are not limited to displaced blue collar workers or people on welfare rolls.

What do these recent developments in the job market environment portend for the training and education needs of workers and employers? In particular, what are the ramifications as they relate to colleges and universities?

- A college education is becoming the gateway opportunity to earn an adequate wage. It's not so much that college guarantees a good job as it once did; it's that a college education is needed to compete effectively for a good job and a good income. College educated

workers are the only group whose real wages have not fallen in the early 1990s.[9] Further, the results of a 1990 poll conducted by Yankelovich, Clancy and Shulman for *Time Magazine* and the Cable News Network reported that four out of five respondents believe that young people starting out in life today have little chance of success without some postsecondary education.[10] This pattern of low-paid, low-skilled jobs is pronounced for young workers without college degrees.[11]

At the same time, not all jobs are in professional, managerial or leading edge technical areas. Many jobs in the service sector, for example, will not require a college degree. However, all jobs will require better "basic skills" and "workplace skills" and it is in this regard that colleges and universities, as well as elementary and secondary schools, are being increasingly criticized:

- The recent report of the Business-Higher Education Forum, for example, reported that "corporate leaders are concerned less with a decline in the quality of higher education students than with developing workers who can adapt and lead in business conditions characterized by dramatic change." Further, "corporate leaders agree that (college) graduates are deficient in a number of areas, including leadership and communications skills; quantification skills, interpersonal relations, and the ability to work in teams; the understanding needed to work with a diverse workforce at home and abroad; and a capacity to adapt to rapid change."[12] Many of these "workplace skills" are not typically emphasized in college, and "basic skills" are aligned with academic disciplines as opposed to being emphasized across the curriculum.

How well positioned are colleges and universities to respond to the demands and expectations of workers and employers? Not unlike businesses, colleges and universities will need to adapt to many changes in instructional delivery systems. Students are expecting more flexible learning environments in terms of when and where instruction is offered. New learners and those seeking retraining realize that employers are placing a premium on applied skills and will not readily accept heavy doses of theory delivered in large group formats. Colleges and universities also will need to capitalize upon new technologies. New learners will need to

become "information literate," that is, to not only use technology advantageously, but to be an efficient and knowledgeable consumer of information.

This paper examines higher education's roles in workforce development in terms of the expectations of employers, learners and the public during a time of rapidly changing demands and new opportunities. As these expectations are examined, and as strategies for addressing them are developed, state higher education boards will need to develop broader and more effective linkages with government, elementary and secondary education, and employers. On some issues higher education and state higher education agencies will need to play leadership roles, or efforts will fail to achieve change. Since colleges and universities will be directly involved in implementing the necessary strategies, state higher education boards also will need to find ways to encourage, support and capitalize upon the distinctive contributions of the institutions within their purview in order to effectively address these new expectations. This may well require new incentives and fundamental changes within higher education at all levels.

Against this backdrop the following sections examine the kinds of responses that colleges and universities are being called upon to make, as well as the challenges they face in playing a key role in statewide workforce development systems.

Expectations of Employers: The Need for New Kinds of Skills

Employers are placing a high priority on what they commonly refer to as "workplace skills" or "basic skills." Even though employers tend to use the terms "basic skills" and "workplace skills" interchangeably, it is useful to delineate "basic skills" as the mathematical/analytical and communication skills that are the core capabilities underlying all of education and work. "Workplace skills" are those attributes such as leadership, reliability, negotiation and interpersonal relations skills, the ability to function effectively in an ambiguous, complex and rapidly changing environment, and teamwork that are also valued in the workplace. But unlike "basic skills," "workplace skills" are not aligned with traditional disciplines such as mathematics, logic, speech and rhetoric. "Vocational skills" are developed in majors, fields of study, professional programs and technical specializations and are aligned with standard occupational classifications.

Employers want assurances that potential employees have acquired these skills as a part of their educational experiences. For example, a recent study of the Business-Higher Education Forum suggests that business leaders feel college and university graduates have deficiencies in meeting some critical workforce needs. According to a corporate CEO interviewed for the study, "technological skills appear to be getting better, but I think deficiencies in composition, reading, writing, logic and clarity of thought processes are becoming more pronounced. Graduates are not strong in influencing, negotiating, listening, teaming, and interpersonal skills."[13]

Employers believe that several steps need to be taken in order to better address their workforce priorities. First, colleges and universities must do a better job of helping graduates acquire "workplace skills," as well as enhance their "basic skills." Second, there needs to be a fuller integration of education and work—these are not independent endeavors. Finally, employers want assurances that the people they hire are well prepared, and they believe these assurances should be couched in well defined performance standards.

Employers tend to view these priorities in the competitive environment in which they operate. That is, they view postsecondary educational institutions as they do their other suppliers. They expect their workforce needs to be addressed in a timely manner. They expect the educational products they buy to meet high quality standards. And, they expect colleges and universities to deliver education and training in a cost-effective way, capitalizing upon new technologies and delivery systems. Indeed, they expect colleges and universities to be competitive in all respects with their own "corporate universities."

Development of Basic Skills and Workplace Skills

Employers seem to be relatively well satisfied with the "technical knowledge" that college graduates bring to the workplace; that is, the skills and knowledge acquired in the major appears to meet their expectations. However, there is growing dissatisfaction with workplace skills. This is somewhat puzzling because many of the same skills cited by employers—communication and computational skills, taking responsibility for results, the ability to deal with abstraction and apply logical thinking and a tolerance for diversity—also appear to be central to success in college. On the other hand many of the values, philosophies and practices of colleges and universities and their faculties appear to be at odds with the priorities that employers place on workplace skills. The following table contrasts these values and practices in higher education with the expectations expressed by employers relative to workplace skills.

Workplace Skill Expectations of Employers in Contrast with Values and Practices in Colleges and Universities

Expectations of Employers	Higher Education Values & Practices
Boundarylessness	Modular learning; formal course boundaries
Integration of skills across organization	Independence of the disciplines
Cooperation and teamwork	Competition and individualism
Leadership	Decision-making by consensus
Decisiveness	Emphasis on collegiality
Just-in-time training	Formal, and extended, academic calendars
Flying in formation	Flying solo
Encouraging listening and inventiveness	Protecting the mores of the disciplines
Development of interpersonal skills	Eccentric behavior, absent-mindedness and isolation accepted, if not implicity encouraged
Tolerance for ambiguity	Precision and stability valued
Ability to change	Cling to current practices and beliefs

Even though it is difficult to generalize the values and practices of colleges and universities, faculty and academic disciplines, as has been done in the above table, there is enough validity to the contrasts between practices in higher education and the workplace skill priorities of businesses to illustrate the gaps between them. Nevertheless, business leaders believe that many

of these skills can and should be taught on campus.[14]

If this is to occur, however, colleges and universities will need to change in very fundamental ways how they "go about business." These changes will include modifying the lockstep formats of traditional course schedules, integrating basic skill development across the curriculum, and encouraging teamwork, interpersonal development and leadership in conjunction with acquiring technical knowledge. It is not at all clear what kinds of incentives and restructuring would be needed to bring about such changes in the culture and environment of many colleges and universities. It is not even clear that all colleges and universities should be encouraged to change in all of these respects.

Integration of Education and Work

It is clear that employers see a better integration of education and work, achieved primarily through work-based learning experiences, as an important means of addressing their concerns about deficiencies in workplace skills. In many states business interests, such as the state chamber of commerce and industry associations, have pressed for work-based learning experiences and a key role for business involvement.

One of the basic premises of the federal School-to-Work Opportunities Act (STW) is that school-based and work-based learning are both essential and can be mutually supportive. Certainly, many of the same competencies are essential to success in education and in work. Workplace and "school-place" competencies appear to be mutually inclusive, and according to employers need to be made mutually supportive.

As states commit to a closer integration of school- and work-based learning, workforce readiness initiatives and educational reform tend to become one and the same agenda. In fact, it can be counter-productive to independently carry out separate educational reform and school-to-work initiatives at either the state or local levels. Students and parents, and employers, do not seem to delineate their objectives along these lines. Further, educational resources and curricula will need to simultaneously support the goals of educational reform and workforce readiness. It is unlikely that states or local school districts could afford to support separate curricular philosophies and content. If this integration is necessary at the K-12 level, it may be equally applicable at the postsecondary level, where considerable integration of work-based learning already occurs.

Historically, skill development and learning have often been viewed as taking place independently, with work-based experiences tending toward occupational skill development and classroom-based experiences toward learning in an academic context. In fact, at the collegiate level there often has been a conscious effort to segregate academic and vocational education. Those ideas are changing. Indeed, the goal is to find ways to more effectively integrate knowledge and skills. The means of accomplishing this are still evolving, but the increased emphasis on applied learning—tech-prep, internships, coop-work programs, and youth apprenticeship programs—are certainly strategies for moving in this direction.

Work-Based Learning at the Postsecondary Level: Colleges and universities have long employed work-based strategies, although, for the most part, in professional programs. Medical doctors, for example, are trained through clinical rotations in which patient care is delivered simultaneously with the training of new physicians. The same is true in other health profession education programs. Teacher education programs also include internships and "practice teaching" as a degree requirement. In addition, coop-work is required or encouraged in many programs, as are practice, internships and clinical experiences.

Many institutions, particularly community colleges and technical institutes, are establishing formal organizational units to deliver "contract training." These centers and institutes are responding to the distinctive needs of individual business with tailored programs that are for the most part "non-degree" oriented. These new organizational units have the explicit mission of being "business suppliers." Some of these efforts, both on the part of universities and of community colleges and technical institutes, are encountering difficulties because the missions and capabilities of individual institutions are not broad enough to serve effectively the full scope of a business' training and educational needs. Cooperative and mutually supportive efforts among institutions are needed to effectively respond to the needs of most businesses.

Most programs in the liberal arts and sciences, however, neither require nor necessarily encourage applied learning. This frequently leads employers to complain that while college graduates may have great theoretical knowledge, they have little understanding of the expectations and demands of the world of work. Higher education institutions, and particularly many faculty, are not well prepared, philosophically or operationally, to respond to these demands.

As school-to-work initiatives expand at the elementary-secondary level, high school graduates in the future will have been increasingly prepared in a work-based environment. Their

learning styles and expectations will reflect these experiences when they enroll in colleges and universities. These students will increasingly want hands-on experiences and mentor relationships with faculty. Colleges and universities are not well positioned to respond to these demands either.

Employer Involvement in Program Delivery: Many employers are fully committed to the concept of work-based learning. In fact, business and industry, with the support of labor, were the primary forces that moved states and the federal government in the directions reflected in the School-To-Work Opportunities Act. Employers see the payoffs of a better prepared workforce that they generally believe will result. In fact, many employers are eager to hire college students in such fields of study as engineering and law during the summer and in coop work programs. Not only does this practice give employers a recruiting advantage, but potential new employees become aware of the "company's way of doing business."

Employers will need to be active partners in planning and implementing workforce development programs. Too often the role of employers is viewed by them and others as "advisory" and "holding accountable" rather than being directly involved and responsible for outcomes. The concept of "work-based learning" assumes an active and substantial role for employers.

But, the extent to which employers are willing to devote resources to support large scale work-based learning systems has been largely untested. Youth apprenticeship programs, for example, are based upon individualized, mentored learning experiences that can place heavy demands upon employer personnel. It is questionable, for example, whether all students, both at the secondary level and at the postsecondary level, can make productive contributions to their "employers" in the way that trade apprentices and medical residents do. If it's all "learn" and no "payoff" it is unlikely that employers will support work-based learning in a large-scale way without being subsidized in some way. Will inadequate numbers of employers that are willing to support work-based programs in some areas of the state be a new dimension of "school inequities?" Under what conditions will employers support, or not support, work-based learning? For example, employers are sure to be wary about running afoul of child labor laws and OSHA. The question of whether work-based learners are to be paid, or unpaid, will be a concern for employers as well as unions. Statewide work-based learning systems that easily assume these problems away are likely in for some unpleasant surprises.

Another of the dilemmas faced by work-based learning programs is how to achieve a "critical mass" of student interest and at the same time maintain a meaningful focus on a particular career. For example, in order to develop a relevant apprenticeship program it is generally assumed that it will need to target a specific career, or a cluster of related careers—the more targeted, the more relevant. However, as the curriculum becomes more narrowly defined, it will capture the interest of fewer students. When this happens it is increasingly difficult to achieve economies of scale and the program can become prohibitively expensive. Colleges and universities also will face challenges in bringing work-based components "up to scale," although not to the extent of the relatively smaller secondary schools.

Work-based programs can be very sophisticated learning experiences. They can introduce learners to leading-edge technologies and advanced scientific concepts. They can also focus on developing generic workplace skills as opposed to being linked to specific occupations. Colleges and universities (and schools) may well be advised to build work-based components on the objectives of developing generic workplace skills and concentrating on conveying to students how very fundamental mathematical and communications skills and concepts are applied in and relevant to the world of work.

Standards and Credentials

Employers have become distrustful of "degrees." Unfortunately, they have come to learn that just because someone has a degree or diploma does not ensure that they are well prepared for the world of work. Now employers want more tangible evidence—something akin to the licensing exams and certifications that have long found utility in ensuring that individuals are well prepared to practice in the professions in the consumer protection context.

Alternatively, two kinds of standards and certifications are being called for: (1) the development of standards and assessments of basic skills (commonly referred to at the secondary level as "certificates of initial mastery"); (2) the development of "career specific", or "task specific" skills (what some have called "certificates of advanced mastery"). Many states, as part of their school-to-work initiatives, have begun to define standards, and the means of assessing them, in both of these areas. Efforts also are underway to develop meaningful skill standards at the national level (for example, by the Secretary's Commission on Acquiring Necessary Skills [SCANS] and the National Skill Standards Board established in the 1994 Goals 2000: Educate

America Act). Further, the national testing services are devoting considerable attention to defining skills in certain job categories and developing instruments to measure them, for example, ACT's Work Keys.

Most of the efforts related to standards have focused at the secondary level up to this point. These efforts do have ramifications for higher education, however. Further, it can be expected that standards development will become increasingly important at the postsecondary level, particularly in the area of "workplace skills" where employers see some major deficiencies in the college graduates they are hiring.

Since the mid-1980s many colleges and universities and state systems of higher education have been engaged in highly visible "assessment" efforts. Higher education accrediting associations have also begun to emphasize outcomes assessment in their accreditation processes; and again, the national testing bodies have developed tools to support postsecondary assessment efforts. Clearly, the assessment of higher education outcomes runs parallel with the standard-setting activities that are being called for by employers and being implemented as part of school-to-work initiatives. However, little new progress has been made in recent years, and the assessment results thus far have been rather narrowly defined and have encountered resource and technical problems in the measurement area. There also is a question of whether the assessment efforts mounted by many colleges and universities and state higher education systems are designed to respond effectively to the assurances that employers seek relative to "workplace skills." That is, how does one measure leadership, interpersonal relations, team-building, etc.? Higher education is likely at a point where it needs to reexamine its assessment initiatives and ask how it can best build upon these activities to address the interests of employers, as well as governors and legislators, in the development of meaningful standards of postsecondary performance.

States are proceeding quite independently with their standard setting and assessment activities. At the same time many colleges and universities enroll large numbers of out-of-state students and state boundaries do not play a major role in the employment decisions of many businesses and corporations. Consequently, the portability of standards is a potential barrier that needs to be addressed. Whether this portability problem can be overcome through national efforts, which tend to be hampered by the necessity of accommodating the least common denominator, remains to be seen. Similarly, colleges and universities must be convinced that

standards are meaningful in the context of college success. Thus, standards will be a central issue in implementing any changes in college and university admissions and placement processes.

The development of standards can also create a number of sensitive dilemmas in other areas as well. For example, they can highlight fundamental philosophical differences about what constitutes appropriate preparation for work and for college. Such differences are what delineate the legitimately diverse missions of colleges and universities. The process of developing standards, and who is involved in this task, will raise controversial questions about "who should be the keeper of standards"—business, labor, schools, or colleges?

In summary, employers want to play a major role in the education and training enterprise. They see it a matter of profit and loss, gaining a competitive edge; indeed, in some cases it is a matter of business success and failure.

Employers view education providers as suppliers. They expect a high quality product that meets the standards of their workplace. They expect educational services to be available when and where they need them, and to be tailored to their needs and those of their employees. They are prepared to turn to whomever can meet their needs, and if necessary many of the large corporations will meet more of their training and education needs "internally." Colleges and universities will need to increasingly view themselves as competing for the business of businesses.

If higher education is to effectively respond to the needs of businesses and corporations it will have to address their concerns related to deficiencies in "workplace skills." Colleges and universities also will need to find ways to work more effectively with employers to achieve a better integration of education and work and the development of "applied skills." This likely entails an expansion of work-based experiences as an integral part of curricula, and not just in the professional fields of study.

Finally, colleges and universities will need to address employer demands for more tangible assurances that graduates are well-prepared for the world of work. Higher education also will need to coordinate its efforts in the development of standards and performance assessment with similar efforts at the elementary and secondary levels to address concerns related to portability, articulation and college admission.

Expectations of Learners: New Delivery Systems

Most learners, even Ph.D. candidates, pursue educational opportunities with occupational objectives in mind. Postsecondary education, particularly beyond the occupational programs offered by community colleges and technical institutes, is sometimes not viewed as a workforce preparation pathway. However, this is not the prevailing view of most students and parents, and certainly is not that of older postsecondary students seeking educational credentials and skill upgrading. It is not surprising, then, that the expectations of postsecondary learners parallel those of employers, or, are in the process of aligning themselves with the workforce needs of employers.

The population of older "non-traditional" students is growing and will soon become the majority of students in higher education. Between 1970 and 1995 the proportion of students over age 25 increased from 28 percent to 44 percent of the over 15,000,000 students attending American colleges and universities. Many of these students are place-bound by job and family responsibilities and are attending on a part-time basis. Therefore, they come to postsecondary education with specific expectations.

Henry Spille, Director of the Center for Adult Learning and Educational Credentials at the American Council on Education, has characterized the expectations of contemporary learners in terms of seven major changes that are already well underway in postsecondary education:[15]

- What is taught and learned: There will be increased emphasis on "workplace skills." This is clearly an area where the expectations of employers will reinforce the expectations of learners.

- Where learning occurs: Learning is occurring in a variety of off-campus settings including libraries, hotel conference facilities, and at the work site. As telecommunications and computer-based instructional delivery systems become more widely utilized, learning will occur in an even larger number of places, and increasingly in the home.

- When learning occurs: Heretofore, learning takes place when it is most convenient for the instructor. Increasingly in the future learners will expect learning opportunities to be available at times that are most convenient for them.

- How learning occurs: Adults expect to be "active" and "interactive" learners. Further, learners will expect training and instruction to focus on what they need to know at a given point in time, usually in the context of their jobs. They will want just-in-time learning delivered in well defined modules that are tailored to their learning needs.

- Who teaches: Anyone who has taught knows that the best way to learn is to teach. That is why active learning is successful. Coaching, mentoring, and study groups will become increasingly popular as effective learning strategies. Computer technology will open more interactive learning opportunities. More instruction will be offered by corporate leaders, small business entrepreneurs and professionals. As DeVry advertises, "our instructors practice what they teach."

- Who sponsors learning: Learning is no longer the sole province of colleges and universities, primarily because many of the needs of contemporary learners are not adequately addressed within the time frames and formats offered by most colleges and universities. Corporations, professional and business associations, unions, etc. are increasingly sponsoring or contracting for learning that is desired by their members and employees.

- Who credentials: Traditionally, degrees and diplomas have been utilized to document learning experiences by measuring the length of the program or numbers of "credits earned." Increasingly, employers are asking for evidence of "learning outcomes" and as a result learners will be motivated to seek credentials that are based on well-defined skill and knowledge demonstrations.

Students attending full time on residential campuses share many of these same objectives. While there are differences in attendance patterns, sources of financial support, and learning environment between older and "traditional" learners, there are many similarities in their occupational objectives as well. First, many of the younger students resemble the adult learner in that they are attending urban universities or community colleges, working at the same time, and living off campus. Second, as college costs rise at twice the rate of inflation, students of

both types are becoming more concerned about being efficient learners. Third, as emphasized in the preceding section, all learners will need to acquire and sharpen their workplace skills and certainly the most critical skill of all—the ability to learn. Fourth, new generations of high school graduates that have been involved increasingly in applied and work-based learning experiences will expect these same opportunities when they arrive on college campuses. Finally, the traditional college-age student will soon become an adult learner. The one constant across all learners is that education leads to the need for more education; the more skilled and knowledgeable one becomes, the more frequently it is necessary to renew and upgrade one's skills and knowledge.

Many of the above expectations, that is, the what, where and when of learning, focus on how learning best occurs—what might be called the effectiveness or productivity of learning. Others highlight the interconnectivity of learning across different institutions and providers of education and training. Underlying all of these learning expectations is the realization that learning will need to continue on a periodic basis throughout one's lifetime, and therefore learners will be served by a series of providers and will have a need to continually build upon prior learning experiences. Finally, the need to capitalize upon new delivery systems, particularly technologically-based systems, has ramifications for both the productivity of learners and the articulation of learning experiences. The following sections examine the challenges that colleges and universities and state systems of higher education face as they address learner expectations in relation to learner productivity, transitions across learning experiences and the deployment of new delivery systems.

Learner Productivity

More productive learners are likely to be more productive workers. Again, learning and working skills have much in common, and the "ability to learn" is particularly relevant in both environments. Colleges and universities should have high expectations for learner productivity. These expectations can be expressed in a variety of ways: (1) by providing incentives, and support, for learners to achieve their educational and training objectives in a timely manner; (2) by conveying to students that they share a responsibility for capitalizing upon learning opportunities, and making effective use of institutional resources; (3) by holding high expectations for student preparation, and communicating those expectations to schools, parents

and potential students, and employers; and (4) by helping students make good choices among potential learning experiences.

Timely Progress: Colleges and universities need to ensure that their academic calendars, scheduling procedures and curricular requirements make effective use of student and faculty time, and facilities. When full-time students take more than four years to complete baccalaureate degrees, they use additional institutional resources, more of their own resources, and forego income as well. While adult and part-time learners pursue their objectives on more flexible schedules, they too can waste personal and institutional resources if learning experiences are not available when and where they need them. Colleges and universities should examine questions such as: Have program requirements expanded over time, and are students able to meet these requirements within reasonable timeframes? Are students taking responsibility for their learning productivity (i.e., are they dropping courses, changing educational or training objectives mid-stream, taking reduced loads)? Are irregularities in time-day patterns for courses, excessive breaks between terms, and infrequent offerings of needed courses causing students difficulties in completing their educational objectives? Are students losing credit as they transfer from one learning experience to another?

It will be important for colleges and universities to provide incentives for students to reach their educational goals expeditiously and to support students in making timely progress in their educational programs.

Student Preparation: Better prepared students will be more productive learners. Colleges and universities cannot directly insure that students are well prepared by the high schools from which they are admitted or the postsecondary institutions from which they transfer. But, colleges and universities can influence and support better student preparation in feeder institutions. First, colleges and universities can make visible and specific their expectations for student preparation and help students become aware of the demands of college and what they can best do to be prepared for the challenges of college. Second, advanced placement and higher standards can be encouraged. Some states for example, have subsidized the costs associated with advanced placement resulting in a dramatic increase in the numbers of participants. Other states and institutions allow qualified students to take courses for college credit during their senior year in high school. Institutions could also establish school-college partnerships that lead to better student preparation. Such partnerships could encompass a wide range of activities including summer and

weekend academic enrichment programs for marginal students, sponsoring mobile labs or bringing high school students and their teachers to campus for science laboratory experiences.

Valuing Student Effort: There are many practices by outstanding faculty that colleges and universities should try to replicate on a wide-scale. When they become pervasive on a campus these practices can make an enormous difference in learner productivity. They might generally be referred to as "valuing student efforts and holding high expectations." They are usually conveyed by example: being on time for classes and meetings and expecting students to do the same; grading papers carefully and promptly and expecting the same care and promptness to be reflected in student work; making sure students know when they are not meeting expectations as well as when they are, and encouraging students to provide similar feedback to faculty. Many faculty are undoubtedly already doing what is suggested here, but it is easy to forget to pay attention to the special efforts that create an environment that is conducive to improving learner productivity.

Informed Choices: Poor choices among potential learning opportunities result in "false starts," unmet educational objectives and a waste of both student and institutional resources. Students can be aided in making good choices through informed counseling and advice. Students also need good information about jobs and job opportunities, institutions and their success at meeting student objectives and about resources such as student financial aid and access to technologies that can support their pursuit of learning objectives.

Improvements in learning productivity, as in other areas of productivity improvement in higher education, will depend upon initiatives at the campus and academic unit levels and the active involvement of faculty. State higher education boards will need to find ways to influence, encourage and support actions on the part of colleges and universities that will result in improved learning productivity.

Transitions Across Educational Levels and Careers

The complex mosaic of education and work interrelationships should be recognized in statewide workforce development strategies. Relevant transitions occur across educational levels; across career interests; across retraining and skill upgrading needs; from adult education (literacy, high school completion, English as a Second Language) to work and further education; from education to work; and from work to education. A narrow focus precludes options, ignores

needed articulation efforts, and in the extreme can disenfranchise many who need to be served by a comprehensive workforce development system. The following sub-sections examine higher education's role in facilitating these transitions.

Admission to College: The terminology "school-to-work" appears to ignore the role of secondary schools in preparing students for college. Premature foreclosure of student options for further education would likely undermine the viability of a workforce preparation program at the secondary level. It is doubtful that parents will support a program, which at an early stage precludes college as a possible goal for their children. At the same time too little attention has been given to how that outcome can be avoided.

Many states, and their schools, colleges and universities, have not explicitly addressed the question of what needs to be done to ensure the compatibility of "preparing students for work" and "preparing students for college." These are not only workforce preparation issues, but equity and access issues as well. Certainly, many of the same skills and learning experiences are important for work as well as for college success. But, the question of how those qualifications are measured and incorporated into admission, as well as placement, processes at the postsecondary level has not been addressed on a wide-scale basis. Higher education needs to work with elementary and secondary education to successfully answer this question, or the matriculation process could be a serious long range impediment to sustaining school-to-work initiatives. The national testing services have a stake in addressing this concern, as well as expertise that needs to be drawn upon in seeking solutions.

The challenge is to translate skills standards, competency-based assessments and/or outcomes-based graduation requirements into measures and formats that can be utilized in the admissions and placement processes at the postsecondary level. There are several issues that need to be addressed in this regard. First, college and university admission and placement decisions are based largely upon the best available predictors of college success (which currently rely heavily upon high school rank, high school courses taken and admission test scores). It can be expected that colleges and universities will be reluctant to replace these measures with other ones unless they are convinced that they will be as good or better predictors of college success. Second, colleges and universities will be reluctant to adopt new admissions processes that result in significantly greater resource requirements to analyze and process voluminous information. Finally, colleges will need to adapt their programs to the learning modes and experiences of

students educated in work-based environments if these students are to be well served.

Articulation at the Postsecondary Level: States with comprehensive community college systems have historically given considerable attention to articulating "transfer programs" with baccalaureate degrees offered by four-year institutions. While these challenges have by no means been "solved" (articulation problems are never permanently solved), articulation is becoming a broader issue for many states and institutions. First, it is not only community college students that make postsecondary transitions—so do technical college students and student attending baccalaureate granting institutions. Second, students do not only transfer immediately upon completing an Associate of Arts (AA) or Associate of Science (AS) degree, many students seek to transfer before completing these degrees. Finally, more and more students will seek further education after completing "job-entry programs" (i.e., occupational certificates and Associate of Applied Science degrees) at the postsecondary level. These students will include those who pursued tech-prep programs (i.e., programs that articulate "applied learning" at the secondary level with occupational programs in community and technical colleges).

Expanded efforts will be needed to address the broader range of articulation objectives. When curricula and learning experiences do not effectively articulate, they become a drain on both student and institutional resources. Neither students nor educational institutions can afford the large-scale loss of productivity that will occur if these broader articulation challenges are not addressed.

Transitions Between Work and Further Training: Most of the people who will be employed during the next twenty years, and upon whom the nation's economy will depend, are already working. Further, most of these employees will need to develop new skills if they are to continue to be productive workers. Clearly, no state can have an effective workforce development system and ignore the challenges associated with meeting the retraining and further educational needs of these workers and their employers. Higher education will need to play a central role in addressing these needs.

Colleges and universities are often criticized by employers for not being responsive to the skill-upgrading needs of their employees. This criticism has several dimensions. First, the time frames and formats of training offered by colleges and universities are not conducive to the needs of workers (to make the point by overstating, workers don't take classes at 10:00 a.m. on Mondays, Wednesdays and Fridays). Second, programs are needed onsite or at convenient

locations. Faculty are usually not available at the right locations. Finally, retraining delivered by colleges and universities is often too theoretical and not relevant to the on-the-job skills and knowledge demands of the workplace. To state it in another way, the transition from work to additional education and retraining does not build upon the knowledge and skills workers acquire through their jobs. Higher education needs to better articulate with job-based learning.

Adult Education: Perhaps the most difficult of all transitions to support are those from unemployment and welfare to education or work. The needs of disadvantaged and ill-prepared people hoping to make these transitions are great and certainly extend beyond a lack of education and skills (i.e., these individuals usually have financial, social and family problems as well).

Welfare reform proposals being considered at the federal level as well as by many states are likely to increase the demand for adult education. Many of these proposals build upon two related premises: first, there should be limitations on the amount of time that individuals spend on welfare; and second, that if such limitations are to succeed, people on welfare will need training that prepares them for jobs. State welfare and workforce development systems are likely to be more tightly interconnected in the future.

Workforce development systems that overlook transitions by high school dropouts, and from welfare and unemployment to education and work forego opportunities to leverage their resources and strategies to gain additional social and economic advantages. Further, when these transitions are successfully made they must be reinforced. Literacy training should not be viewed as an end result, but rather as a stepping stone to further education and skill development. Colleges and universities providing GED, English as a Second Language and remedial courses to adults should be looking for ways to best support the next transition to either work or additional education.

It may be advantageous to encourage and support dual enrollment in GED programs and other postsecondary programs such as an occupational certificate program. While these options would allow students to simultaneously complete high school equivalency and make progress toward work, barriers that prevent students from qualifying for financial aid because they do not meet "ability to benefit" provisions, would need to be overcome.

In summary, successful articulation efforts are predicated on the direct involvement of those people who are responsible for delivering programs on both side of the transition. That is, there is no way to effectively articulate tech-prep programs unless consensus can be achieved among the community college and high school instructors who will deliver the program. Further, people

who have a stake in the expected outcomes of articulated programs must be directly involved (i.e., teachers, faculty, employers and union representatives). While efforts that are formally organized around different transitions will undoubtedly proceed independently, they need to be informed by other articulation initiatives because students and employees will potentially move across many points of transition during the course of their work and schooling. Isolated articulation efforts can actually create more formidable barriers than they are designed to eliminate. For example, do tech-prep articulations make choice of baccalaureate options unduly difficult? Are there, for example, efforts to coordinate tech-prep articulation efforts with community college-to-baccalaureate completion articulation efforts?

Teacher Preparation and Professional Development

Colleges and universities are responsible for training the new teachers who will face the challenges of integrating effectively education and work. Most faculty in colleges of education, however, are largely unaware of workforce development initiatives and are not well positioned to train new teachers for roles in a system that links school-based and work-based learning. In-service teachers face these same challenges in adapting to tech-prep, youth apprenticeships and other work-related learning experiences.

There are no clear directions at this point for how universities and their colleges of education should proceed to address these challenges. There does not appear to be a developing consensus on what changes need to be made to teacher training curricula to best prepare teachers to be effective in delivering work-based learning. Some states are developing programs that would provide teachers and counselors opportunities to observe and participate in workplace developments through summer jobs and internships. It would seem that work-based instructional experiences would be an increasingly important component of teacher education programs in colleges and universities.

Teacher certification requirements, which are often quite prescriptive of what must be offered in teacher preparation programs, can also be significant barriers to modifying current programs to prepare new teachers to deliver tech-prep courses and relate to work-based learning environments. Modifying teacher certification requirements will require statutory changes in many cases, and will encounter political resistance from those who are not receptive to change.

Proceeding on the basis that teachers and colleges of education will easily adapt to the

demands of new systems which more closely integrate education and work entails high risks. State elementary and secondary education agencies and boards and state higher education boards will need to collaborate to develop strategies for dealing with these challenges as a central component of the state's workforce development efforts.

Just as teachers need to be prepared to deliver work-relevant skills and knowledge, the quality of organized training that occurs in the workplace will depend upon employer trainers and mentors who are well prepared to deliver work-based training. Again, it is not clear how this is to be accomplished.

New Delivery Systems

As learners and employers seek more flexible and timely access to education and training, colleges and universities will need to respond with new instructional delivery systems. These systems need to serve a variety of off-campus sites, including workplaces. They have to be capable of delivering instruction on an as-needed basis. Active and interactive learners want mentored and small group learning opportunities delivered in flexible formats. Work-based experiences will, of course, need to be delivered in offices, laboratories and at points of production and distribution. All of these learning experiences will need to be rigorous, of high quality and closely monitored.

Adult learners have for some time demanded more flexible delivery systems and a few colleges and universities have responded. However, as school-to-work initiatives mature and expand, secondary students in youth apprentice and tech-prep programs will come to college campuses wanting to continue these kinds of learning experiences. In the future the changes described in the introduction to this section with regard to the when, where, how and who of learning expectations will not be limited to non-traditional, adult learners.

These changes will have far-reaching ramifications for virtually all areas of institutional operations—for curricula, faculty development, higher education data systems, library access, instructional technologies, and financial aid. In some of these areas it will be essential to achieve a high level of coordination at the state level as well as a sharing of resources across institutions. For example, the developmental costs associated with work-based curricula and curricula delivered via computer and telecommunications-based technologies can be very expensive.

Additionally, the need to assist faculty in the development and use of new delivery systems

will need to be addressed at the institutional and academic unit levels. There will be costs associated with these initiatives as well and they cannot be overlooked without jeopardizing the quality of the learning experiences.

Computer- and telecommunications-based systems can be capitalized upon to support new instructional delivery needs. These systems can overcome distance barriers. They can reach out to the shop floor, and make available multiple learning modes ranging across two-way interactive video to computer-based experiments and simulations to Internet resources and access to curricula via the World Wide Web. Further, telecommunications-based technologies can bring together simultaneously learners at multiple sites, thereby not only enriching the learning experience but making it possible to serve the special needs of small numbers of learners in a cost-effective way. Some states and colleges and universities are making great strides in taking advantage of these resources; others lag far behind.[16]

Expectations of Government and the Public: Coordination, Performance and Accountability

Several federal initiatives target workforce development systems in the states. For example, the School-To-Work Opportunities Act was passed by Congress in 1994. This legislation responds to many of the expectations of employers and learners described in the previous sections of this paper. The Act asks states—and through states, local communities—to assume responsibility for the establishment of comprehensive school-to-work systems. These systems are expected to support well-coordinated school-based and work-based learning at the state and local levels that meet high standards for performance. States have received planning grants from the federal government, and those states that were on the leading edge in establishing school-to-work programs received larger and longer-term implementation grants.

Currently, the federal government is moving in the direction of consolidating the full array of job related programs into a series of block grants to the states. In addition to the School-To-Work Opportunities Act, these programs include the Carl D. Perkins Vocational Education and Applied Technology Act, the Job Training Partnership Act and the Adult Education Act. Block grant bills have been passed in both the House and Senate, but some significant differences remain to be resolved.

Another area of legislative interest that will undoubtedly have an impact on workforce development systems centers on welfare reform. The thrust of welfare reform initiatives is to place limits on how long an individual can remain on the welfare rolls, while providing opportunities for welfare recipients to prepare for jobs through education and training programs.

In summary, statewide workforce development systems are in a state of transition. There is growing recognition that effective workforce development systems will result from well-coordinated efforts across many governmental agencies, employers and educational providers. The public expects high performance standards and accountability for the effective use of resources as these systems are implemented. It also is clearly in the interest of the citizens and their elected representatives that these workforce development systems be responsive to the needs of both employers and of learners.

Coordination Across Providers

Coordination is a key ingredient of an effective workforce development system: coordination across an array of agencies at the state level; partnerships involving training and education providers, businesses, and community leadership at the local level; and cooperative efforts within postsecondary education. Coordination is a basic tenet of the School-To-Work Opportunities Act and will surely be a central theme of block grant legislation that consolidates federal work-related programs.

In many states, the role of higher education in overall workforce development initiatives is not well understood. For example, some states have adopted relatively narrow perspectives in their school-to-work efforts. Indeed, "school-to-work" often implies that "college-to-work" and "school-to-college" are not central objectives. But this will likely change as statewide workforce development efforts recognize that employment and economic development needs are broad, and as the challenges of opening opportunities by facilitating transitions across the different levels of education and employment become increasingly apparent. On the other hand, colleges and universities could present major barriers to school-to-work in such areas as admissions and teacher training. It is important for state higher education coordinating and governing boards to work with state boards and agencies responsible for elementary and secondary education to overcome these potential barriers.

Coordination of Programs at the State Level: A wide array of state agencies are potential contributors to a state's workforce development plan. For example, the following types of state agencies would typically have a role in workforce development: elementary-secondary education, employment services, economic development, higher education, community/technical college systems, labor, vocational rehabilitation, adult education, and public aid. Also, there are the state level organizations that would both contribute to and influence the direction of a workforce development system, such as: state chambers of commerce, organized labor, industry associations, and educational organizations and coalitions, as well as committees and commissions that were historically established by the state to advise on some aspect of workforce development, or were established as a result of federal legislation.[17] Considering this wide array of roles and influences, it is easy to see how higher education could be rather peripheral to a state's workforce development planning.

Further complicating higher education's involvement in statewide workforce development planning are the turf struggles that surround the administration of existing federal programs related to workforce development and the impending consolidation of these programs into block grants. States have historically organized their workforce development initiatives around relevant federal programs such as the Carl D. Perkins Vocational Education and Applied Technology Act and the Job Training Partnership Act (JTPA). These large federal programs permit significant administrative set-asides that support influential bureaucracies, and the constituencies they have developed. Changes in federal programs, such as found in the impending consolidation of over 150 separate federal programs supporting some aspect of workforce development, have significant ramifications for existing organizational arrangements. Jobs and influence are at stake. Under such conditions existing bureaucracies are more inclined to protect their turf than to coordinate their plans and activities. Since higher education is usually not responsible for the administration of these programs at the state level, it can find itself as the outsider trying to become involved with reluctant partners.

The irony is that state agencies can find it difficult to work together when such a wide range of expertise and contributions is needed. That is, the scramble for a larger share of the action is occurring in an environment that places a high premium on the contributions of all the players. And, any federal reconfiguration of workforce development programs such as a consolidation into several block grants with greater state and local flexibility to formulate priorities and reallocate resources will influence, and may undermine, state responses. This could be a double-edged sword for states. On one hand, it could have the effect of dismantling entrenched ideas and provide opportunities to redirect resources and launch fresh starts. On the other hand, there will be a tendency for new bureaucracies to form around the new programmatic configurations (e.g., the block grants) and the turf stakes could be raised while all else is put on hold.

In this environment higher education will need to work hard to make a compelling case for the value of its contributions, and conversely, for the risks associated with its exclusion. Higher education's contributions lie in the central role that colleges and universities have historically played in preparing people for work and the importance of the retraining and professional development priorities of a broadly-based workforce development system. The risks of higher education not being an active participant center on difficulties encountered with the development

of standards and articulation of curricula that are not well coordinated across levels of education and training; and the potential for a generation of teachers and faculty that have not been trained or retrained to better prepare their students for the world of work.

Coordination at the Local Level: One of the dilemmas facing states as they attempt to develop well coordinated workforce systems at the state level is that differences in local economies, industries, and job market demands require different responses at the local level. There is a general recognition that communities and geographical regions need flexibility to set priorities and design programs that are responsive to local economic and employment conditions. The School-to-Work Opportunities Act and the versions of the federal block grants under consideration all encourage the establishment of partnerships between education and training providers, businesses and communities to support planning, policy development and priority setting at the local level. But, how do state agencies support uniformly well-coordinated policy directions at the state level, while encouraging regions and communities to embark upon courses that are best suited to their distinctive needs?

In most cases this dilemma first arises when attempts are made to define geographical regions for purposes of labor market planning or to issue requests for proposals (RFPs) to establish local partnerships. As is true at the state level, there are historical precedents for dividing the state into geographical regions, for example, elementary and secondary education districts and regions, service delivery areas established under JTPA, community and technical college districts, county boundaries that define cooperative extension services, etc. Many of these existing geographical configurations are linked to one of the state agencies involved in workforce development, so there are some proprietary interests involved in maintaining existing geographical boundaries. Just as higher education can encounter difficulties in coordinating effectively with other agencies at the state level, colleges and universities often find it difficult to integrate their contributions with those of other organizations and training providers at the community level.

Many services provided at the local level are interrelated and affect workforce development in one way or another. For example, dislocated workers may need employment services, training, and welfare help. Further, information about jobs and educational opportunities are needed by many different people, but in different contexts. Coordination of services can be aided and service delivery enhanced if a focal point is established for providing career information and

directing clients to the most appropriate service provider. Thus, states are encouraging the establishment of "one-stop career centers." Again, the establishment of such centers raises a number of trade-offs. Should they be organized around the same geographical configurations and partnership structures as other components of the workforce delivery system? If the centers are going to provide historical employment services, food stamps, welfare services etc., will they simultaneously be attractive to and effectively serve businesses and workers in need of retraining? Who will provide leadership at the state level for coordinating a system of one-stop career centers, recognizing that the breadth of services they would offer potentially cuts across the responsibilities of a wide range of state agencies?

Emerging welfare reform directions could result in additional programmatic components that would need to be coordinated at the local and state levels. For example, state or federal lawmakers could decide to issue "training vouchers" to people on welfare. These vouchers would be "cashed" by training providers when educational and training services are provided. If such proposals were to materialize there would undoubtedly be a need to "certify" qualified providers, or in some way to monitor providers, to ensure that welfare recipients were getting high quality services that meet their needs. Establishing a system that ensures the training provided to welfare recipients is effective in moving them toward jobs raises some complex questions: What criteria would be used to qualify training providers? Who would be responsible for certification and/or monitoring? What measures would be used to determine whether the system is effective and accountable? Would this system be administered through one-stop career centers at the local level, and if so, what would be the links to the cognizant agency at the state level?

There are many opportunities to draw upon the resources and expertise of colleges and universities in providing and coordinating the breadth of services offered by a comprehensive workforce development system. However, colleges and universities are not always receptive to coordination and sharing resources. Colleges and universities also tend to look beyond the priorities of their immediate service areas as they seek wider recognition. These tendencies will need to change if colleges and universities are to play a meaningful role in workforce and community development at the local level, and to realize their full potential to serve the regions and communities in which they are located.

Coordination Across Postsecondary Education: While achieving effective coordination between training and education providers and employment and economic interests can raise

formidable challenges, it is also not easy to coordinate plans and share resources across colleges and universities at the state or local levels. For example, community colleges and technical institutes have much to contribute to the cooperative extension services offered through the land-grant university, and vice-versa. However, coordination of activities and sharing of resources and expertise among these units of higher education is rare. Likewise, colleges and universities are more likely to compete for market share at off-campus sites than to marshal their resources in collaborative ways to better serve educational demands. Higher education would be well advised to achieve an understanding about how the special contributions and missions of individual institutions and sectors will be brought together in mutually supportive ways to address workforce development priorities. When this can be done higher education can make a more compelling case for it role and contributions; what's more important, it will be well positioned to deliver. Clearly, this is an important role and opportunity for state higher education coordinating and governing boards.

Performance and Accountability

Skill standards, assessments of critical knowledge and skills, and certifications of mastery are encompassed in one form or another in most statewide workforce development plans. Standards provide the means of communicating expectations, providing a well-defined basis for curricular development and the design of work-based experiences, and for defining the parameters of accountability.

On the other hand, when skills and knowledge expectations are not defined in terms of a "common language;" that is, in consistent, well-understood and credible terms, they will not be portable across careers and further levels of education. They will not find acceptance with either employers or educators. Employers must be convinced that standards are relevant to careers and work; consequently, standards must be developed in the context of the real world demands of work, and employers must be involved in the task. Similarly, colleges and universities must be convinced that standards are meaningful in the context of college success. Thus, standards will be a central issue in implementing any changes in college and university admissions and placement processes, as discussed above.

When performance is measured against standards, standards become a basis for program improvement. That is, when standards are not being met something needs to be fixed. When

performance is measured against uniformly accepted standards, standards also become the basis for responding to demands for accountability.

Measurements of performance against standards can also inform "consumer" decisions (where "consumer" is broadly defined to encompass those who make choices about training, education and hiring).

Information feedback across points of transition makes valuable performance information available to providers of education and training. For example, postsecondary institutions can provide insights to secondary schools about the performance of their graduates. This information can provide schools insights leading to program improvement. Likewise, employers can provide feedback to training and education providers at all levels about the performance of employees who participated in their programs. Theoretically, feedback information can be provided at all points of transition. Again, such information can be a basis for both program improvement and accountability; and can in turn inform consumer choices.

In summary, certifications based upon standards that reflect the development of skills and knowledge that are relevant to work will not only inform employers and educational providers, these certifications can also respond to accountability interests of the public and their elected representatives who provide financial support to workforce development programs. But, certifications, like pass rates on licensure exams, are only one measure of performance. Student tracking and follow-up systems can provide additional information that is relevant to program improvement, consumers and accountability. Process measures, such as time to program completion, retention rates and participation patterns, are also proxies for performance that have utility in a consumer information and accountability context.

NOTES

1. *USA Today*, December 15, 1995.

2. "Higher Education and Work Readiness: The View from the Corporation," Business-Higher Education Forum, September 1995.

3. *Chicago Tribune*, December 19, 1995.

4. "AT&T Will Eliminate 40,000 Jobs and Take Charge of $4 Billion," *Wall Street Journal*, January 3, 1996.

5. John Byrne, "The Pain of Downsizing," *Business Week*, May 9, 1994.

6. "Economic Report of the President," Council of Economic Advisors, 1994, pp. 318-319.

7. *Displaced Workers: Trends in the 1980s and Implications for the Future*, Congressional Budget Office, February 1993.

8. *1994 Survey on Downsizing*, American Management Association, July 1994.

9. *The State of Working America-1994*, Economic Policy Institute, 1994.

10. *Time*-CNN Poll, Yankelovich, Clancy, Schulman, June 1990.

11. "Low-Wage Workers Remain in Stagnant Job Market Despite Improved Economy," *Employment and Training Reporter*, June 1994, p. 920.

12. "Higher Education and Work Readiness: The View from the Corporation," Business-Higher Education Forum, September, 1995.

13. Ibid.

14. Ibid.

15. "The Educational Revolution," Henry A. Spille, Commencement Address at the University of Maryland-University College, September 1995.

16. A more complete discussion of technology-based delivery systems is presented in a recent paper by James R. Mingle, "Vision and Reality for Technology-based Delivery Systems in Postecondary Education," SHEEO, December 1995.

17. Some of these organizations include councils on vocational education, occupational information coordinating committees, job training coordinating councils, and commissions on economic development.